SIMRAD

MX525A

GPS/DGPS Sensor

The MX525 DGPS Sensor, featuring built-in RAIM and Space Based Augmentation Systems (SBAS), is compliant to the latest IMO standards.

- **IMO MSC 112(73) compliant^^**
- **RAIM (Receiver Autonomous Integrity Monitoring) Enabled**
- **Meets Smart-Beacon specifications**
- **Connects directly to MX Control and Display Unit (MX CDU)**
- **Better than 1 meter DGPS Position Accuracy**
- **Better than 3 meter GPS Position Accuracy**
- **Integrated DGPS system including beacon and SBAS (WAAS/EGNOS)**
- **NMEA 0183 ver. 3.0 interface**

^^MX CDU is required to comply as an IMO approved system

GPS/DGPS Black-box Receiver

The MX525A delivers a position accuracy better than 1 meters in DGPS mode when using RTCM correction data. It also provides better than 3 meters accuracy in standard GPS mode. It is backward compatible with existing MX420 systems to make them compliant with the latest IMO requirements.

Beacon

Navigation authorities around the world have installed DGPS radiobeacon networks that broadcast free RTCM correction information. With the use of its' built-in beacon demodulator, the MX525A uses these real-time corrections to deliver accurate, reliable positioning when in range of a beacon transmitter. Can be controlled by the operator to accept RTCM data from external sources using the MX Control and Display Unit (MX CDU).

Augmentation

Space Based Augmentation Systems (SBAS) like the European Geostationary Navigation Overlay System (EGNOS), the US Wide Area Augmentation Service (WAAS) and the Japanese MTSAT Satellite based Augmentation System (MSAS) are being developed throughout the world. The MX525A can be controlled to use these systems to provide accurate positions in areas not covered by DGPS beacon stations, but covered by SBAS.

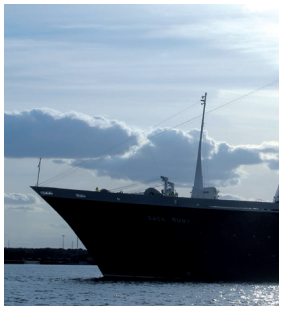
RAIM

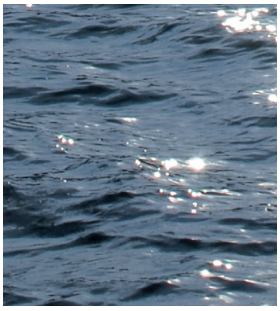
Receiver Autonomous Integrity Monitoring (RAIM) is a safety feature in the MX525A which continously verifies the integrity of the GPS system to ascertain its' accuracy and reliability. When position errors exceeds a pre-set limit, the MX CDU alerts the operator to take precautionary measures. RAIM is one of the latest requirements under IMO MSC 112(73) regulation. This RAIM feature can be accessed by the operator through the MX CDU.

Interface

The MX525A features two independent NMEA compliant serial ports, which are identical to those of the MX421B-10 DGPS Smart Antenna. MX525A interfaces directly to the MX CDU or to other NMEA 0183 compatible devices.

ISO 9001 :2000 Certified ^





MX525A General specifications

Receiver Type: L1, C/A code, 1.575 GHz Frequency

Channels: 12-channel, parallel tracking (10-channel when tracking WAAS/EGNOS/MSAS)

Position Update Rate: 1 Hz default, 5 Hz (optional)

Horizontal Accuracy: <1 m 2D-RMS* (DGPS) <3 m 2D-RMS* (GPS, no S/A)**

Cold Start: 60 s (no almanac)

Satellite Reacquisition: < 10 s (Typical)

Antenna Input Impedance: 50 Ohms

Beacon Sensor Specifications

MSK Bit Rates: 50, 100 and 200 bps
Channels: 2-channel, parallel tracking
Frequency Range: 283.5 to 325 kHz
Operating Modes: Automatic using smart beacon features or manual
Sensitivity: 2.5µV/m for 6 dB SNR @ 200 bps
Dynamic Range: 100 dB
Adjacent Channel Rejection: 61 dB @ f ° ± 400 Hz

Communications

Serial ports: 2 duplex NMEA 0183 Ports
Baud Rates: 4800 (default), 9600, 19200
Data I/O Protocol: NMEA 0183 V3.0
NMEA sentences: GGA, GSA, GST, GSV, RMC, VTG, GRS, ZDA, GBS***
Correction I/O Protocol: RTCM SC-104

Environmental

MX525A Console:
Operating Temperature: -30°C to +70°C
Storage Temperature: -40°C to +85°C
Humidity: 95% non-condensing, protected category

MXB5 Antenna:
Operating Temperature: -30°C to +70°C
Storage Temperature: -40°C to +85°C
Splashproof: "Exposed Category" IEC 60945 ed4

Electrical

MX525A Console:
Operating Voltage: 10.5 to 32 VDC
Reverse Polarity Protection: Yes
Power Consumption: < 3 W
Current Consumption: < 230 mA @ 12 VDC
Interface Cable (included): < 16 dB loss @ 1.575 GHz
DGPS Combined Antenna:
Operating Voltage: 5 to 12 VDC
Power Consumption: <1 Watt
Coax Cable (not included): < 16 dB loss @ 1.575 GHz

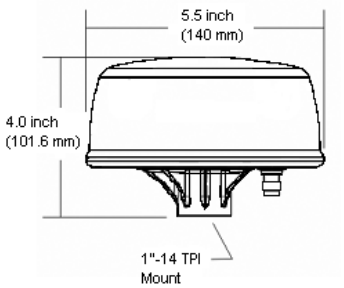
Mechanical

MX525A Console:
Dimensions: 13.5cm (L)x11.4cm (W)x3.7cm (H)
Weight: 0.8 kg
Mounting: U-Bracket
Power/Data Connector: 10 pin (male)
Antenna Connector: TNC (female)
Combined DGPS Antenna:
Dimensions: 14.0cm -Dia. 10.2cm - Height
Weight: 0.46 kg
Antenna Connector: TNC (female)
Mounting: 1 inch - 14 TPI

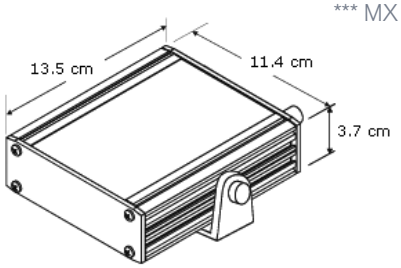
Certifications

BSH and Wheelmark approval, IMO MSC 112(73), CE and FCC

* Depends on multipath environment, number of satellites in view, baseline length (for local services), and ionospheric activity
** Dependent upon ionospheric activity and multipath
*** MX Proprietary RAIM message ($PMVXG, GBS)



MX-B5 DGPS Antenna



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